****
NAVFAC **IGS-16081 (MAY 2002)**

Preparing Activity: LANTNAVFACENGCOM **Based on UFGS-16081N**

ITALIAN GUIDE SPECIFICATIONS

Use for ITALIAN projects only
****

SECTION 16081N

APPARATUS INSPECTION AND TESTING
05/02

****
NOTE: This guide specification is issued by the Atlantic Division, Naval Facilities Engineering Command for regional use in Italy.
****

****
NOTE: This specification covers electrical inspection and testing and shall be used on project specifications where independent field testing is required.

The following sections are referenced for power distribution services and equipment.

--Section 16237, "Single Operation Generator Sets"
--Section 16303, "Underground Electrical Work"
--Section 16341, "SF6 Insulated Pad-Mounted Switchgear"
--Section 16360, "Secondary Unit Substations"
--Section 16410, "Automatic Transfer Switches"
--Section 16442, "Switchboards and Switchgear"

Coordinate the sections in your contract documents with this list and with paragraph entitled "Acceptance Tests and Inspection" in PART 3 of this specification.
****

****
NOTE: Comments and suggestion on this specification are welcome and should be directed to the technical proponent of the specification. A listing of the technical proponents, including their organization designation and telephone number, is on the Internet.

Use of electronic communication is encouraged.

Brackets are used in the text to indicate designer

choices or locations where text must be supplied by the designer.

****

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

****

NOTE: An ISO Standard is published by the International Standard Organization which is a worldwide federation of national standards bodies from 120 countries. ISO standards cover all fields except electric and electronical engineering standards. ISO's are available in both English and French language. ISO/IEC Guide 58 is not valid in Italy.

****

ISO/IEC Guide 58	(1993) Calibration and testing laboratory accreditation systems - General requirements for operation and recognition
ISO/IEC 17025	(1999) General requirements for the competence of testing and calibration laboratories

1.2 RELATED REQUIREMENTS

Section 16050, "Basic Electrical Materials and Methods" applies to this section with additions and modifications specified herein.

1.3 SUBMITTALS

****

NOTE:

Submittals must be limited to those necessary for adequate quality control. The importance of an item in the project should be one of the primary factors in determining if a submittal for the item is required.

A “G” following a submittal item indicates that the submittal requires Government approval. Some submittals are already marked with a “G”. Only delete an existing “G” if the submittal item is not complex and can be reviewed through the Contractor’s Quality Control system. Only add a “G” if the

submittal is sufficiently important or complex in context of the project.
For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation to indicate the approving authority. Recommended codes for Army projects are "RE" for Resident Engineer approval, "ED" for Engineering approval, and "AE" for Architect-Engineer approval. Codes following the "G" typically are not used for Navy projects.
Submittal items not designated with a "G" are considered as being for information only for Army projects and for Contractor Quality Control approval for Navy projects.

****

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-06 Test Reports

Acceptance tests and inspections; G

Submit certified copies of inspection reports and test reports. Reports shall include certification of compliance with specified requirements, identify deficiencies, and recommend corrective action when appropriate. Type and neatly bind test reports to form a part of the final record. Submit test reports that document the results of each test not more than 10 days after test is completed.

SD-07 Certificates

Qualifications of organization, and lead engineering technician; G

Acceptance test and inspections procedure; G

1.4 QUALITY ASSURANCE

****

NOTE: For projects in Italy, use the first bracketed option for testing engineer. Use the second option for other than EFAMED countries, provide the NETA equivalent reference organization for which the Engineer is to be certified, and include ISO/IEC Guide 58, if applicable.

****

1.4.1 Qualifications

[Contractor shall engage the services of a qualified testing engineer to provide inspection, testing, calibration, and adjustment of the electrical

distribution system and equipment listed in paragraph entitled "Acceptance Tests and Inspections" herein. The engineer shall be independent of the supplier, manufacturer, and installer of the equipment. The engineer shall be a first tier subcontractor. No work required by this section of the specification shall be performed by a second tier subcontractor.

a. Submit name and qualifications of the engineer performing the required testing services. Include a list of 3 comparable jobs performed by the engineer with specific names and telephone numbers for reference. Testing and adjustments shall be performed by an engineer registered on the Italian professional rolls for at least 10 years. The engineer shall have been regularly engaged in the inspection, testing, calibration, and adjustment of electrical materials, devices, installations, and systems for a minimum of 5 years. The organization shall have a calibration program, and test instruments used shall be calibrated in accordance with ISO/IEC 17025.

][

Contractor shall engage the services of a qualified testing organization to provide inspection, testing, calibration, and adjustment of the electrical distribution system and generation equipment listed in paragraph entitled "Acceptance Tests and Inspections" herein. Organization shall be independent of the supplier, manufacturer, and installer of the equipment. The organization shall be a first tier subcontractor. No work required by this section of the specification shall be performed by a second tier subcontractor. The organization shall provide the services of a [Greek] [Spanish] [_____] engineer and a lead engineering technician. The engineer shall be [_____] certified.

****

NOTE: Provide an equivalent Organization (for the applicable EFA Mediterranean area) to NETA ATS and insert in the following paragraph in place of "a recognized industry standard".

****

a. Submit name and qualifications of organization. Organization shall have been regularly engaged in the testing of electrical materials, devices, installations, and systems for a minimum of 5 years. The organization shall have a calibration program, and test instruments used shall be calibrated in accordance with [a recognized industry standard][and ISO/IEC Guide 58].

****

NOTE: Provide an equivalent Organization (for the applicable EFA Mediterranean area) to NETA ATS or NICET and insert in the following paragraph in place of "a national organization".

****

b. Submit name and qualifications of the lead engineering technician performing the required testing services. Include a list of three comparable jobs performed by the technician with specific names

and telephone numbers for reference. Testing, inspection, calibration, and adjustments shall be performed by an engineering technician, certified by [a national organization] with a minimum of 5 years' experience inspecting, testing, and calibrating electrical distribution and generation equipment, systems, and devices.]

1.4.2 Acceptance Test and Inspections Procedure

Submit test procedure reports for each item of equipment to be field tested at least 45 days prior to planned testing date. Do not perform testing until after test procedure has been approved.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 ACCEPTANCE TESTS AND INSPECTIONS

****

NOTE: For projects in Italy, use "engineer" and "CEI" information. For projects in other EFA-MED areas, provide an equivalent organization to NETA ATS and insert in place of "applicable standards".

****

Testing [engineer] [organization] shall perform acceptance tests and inspections. Test methods, procedures, and test values shall be performed and evaluated in accordance with [CEI (Italian Electrotechnical Committee)] [applicable standards] [____], the manufacturer's recommendations, paragraph entitled "Field Quality Control" of each applicable specification section, and the preapproval of the Contracting Officer. Equipment shall be placed in service only after completion of required tests and evaluation of the test results have been completed. Contractor shall supply to the testing [engineer] [organization] complete sets of shop drawings, settings of adjustable devices, and other information necessary for an accurate test and inspection of the system prior to the performance of any final testing. Contracting Officer shall be notified at least 14 days in advance of when tests will be conducted by the testing [engineer] [organization]. Perform acceptance tests and inspections on applicable equipment and systems specified in the following sections:

****

NOTE: Select applicable sections for each project. Ensure each equipment section includes the following information.

1. Applicable EFA-MEDITERRANEAN equivalents of NETA ATS listed in the references.

2. The words "and Section 16081, "Apparatus Inspection and Testing" apply" added to paragraph

entitled "Related Requirements."

3. SD-06 submittals with "Acceptance checks and tests" added in PART 1.

4. Appropriate paragraphs from the applicable EFA-MEDITERRANEAN equivalents of NETA manual added under "Field Quality Control" in Part 3.

****

[a. Section 16237, "Single Operation Generator Sets." Functional engine shutdown tests, vibration base-line test, and load bank test shall not be performed by the testing organization. These tests shall be performed by the start-up engineer.]

[b. Section 16303, "Underground Electrical Work."]

[c. Section 16341, "SF6 Insulated Pad-Mounted Switchgear."]

[d. Section 16360, "Secondary Unit Substations."]

[e. Section 16410, "Automatic Transfer and Bypass/Isolation Switches."]

[f. Section 16442, "Switchboards and Switchgear."]

3.2 SYSTEM ACCEPTANCE

Final acceptance of the system is contingent upon satisfactory completion of acceptance tests and inspections.

3.3 PLACING EQUIPMENT IN SERVICE

****

NOTE: For projects in Italy, use "testing engineer". For projects in other EFAMED areas, verify if the "testing organization" option is appropriate.

****

[The testing Engineer] [A representative of the testing organization] shall be present when equipment covered by this section is initially energized and placed in service.

-- End of Section --